

What is claimed is:

1. A method of operating a DC/DC converter having an output coupled to a load with two or more modes of operations, the method comprising:
  - selectively coupling a power source from two or more power sources to an input of the DC/DC converter; and
  - creating a droop in an output signal to the load in response in part to a signal from the power source and in response in part to the operating mode of the load such that the amount of droop in the output signal is based on the operating mode of the load.
2. The method of claim 1, wherein creating the droop in the output signal further comprises:
  - multiplying a sensed current in a feedback loop with a signal that is inversely proportional to a frequency of the load.
3. The method of claim 1, wherein creating the droop in the output signal further comprises:
  - multiplying a sensed current in a feedback loop with a signal that is inversely proportional to a reference voltage, wherein the reference voltage is associated with a desired operating voltage of the load.
4. The method of claim 1, wherein creating the droop in the output signal further comprises:
  - multiplying a sensed current in a feedback loop with a signal inversely proportional to a reference voltage and a signal inversely proportional to a frequency in which the load operates, wherein the reference voltage is reflective of a desired operating voltage of the load.
5. The method of claim 1, wherein creating the droop in the output signal further comprises:

multiplying a sensed current in a feedback loop with a signal that is inversely proportional to a reference voltage squared, wherein the reference voltage is reflective of a desired operating voltage of the load.

6. The method of claim 1, wherein creating the droop in the output signal further comprises:

controlling a gain of a buffer amplifier in a feedback loop with a frequency signal proportional to the frequency in which the load operates.

7. The method of claim 6, wherein the frequency signal is derived from a reference voltage, wherein the reference voltage is associated with a desired operating voltage of the load.